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ONLINE CASE REPORT

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Littré meets de Garengeot: Meckel's diverticulum and appendix in a femoral hernia

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ABSTRACT

Littre's and de Garengeot hernias are rare operative findings, the former describing the presence of a Meckel's diverticulum in a hernia sac and the latter describing the presence of the vermiform appendix in a femoral hernia. The finding of both of these anatomical structures in the same hernia is exquisitely rare and infrequently described. In the following report such a case is described and the current knowledge surrounding these unusual hernias is discussed.

KEYWORDS

Hernia – Femoral hernia – Littre – De Garengeot – Meckel's diverticulum – Acute abdomen – Appendix

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Case history

A 71-year-old woman presented to the accident and emergency department with a 1-day history of lower abdominal pain and sudden onset vomiting. She had passed flatus but not opened her bowels since the pain began. She had a known right femoral hernia that was usually reducible and not operatively managed due to a past medical history of severe chronic obstructive pulmonary disease. On examination, her abdomen was soft and non-distended, with a tender irreducible right groin lump. This was assumed to be incarcerated omentum. She was afebrile but tachycardic with a heart rate of 132 beats per minute and a blood pressure of 125/63mmHg. Blood tests showed a C-reactive protein level of 82.8mg/l, a white cell count of 21.6 x 10^9/l and moderate renal impairment, with an arterial blood gas demonstrating a lactate of 1.25mmol/l. There were no other abnormalities. Abdominal radiography was unremarkable.

A diagnosis of an incarcerated right femoral hernia was made and the patient was managed initially with intravenous fluid resuscitation and analgesia. Given the known history of the hernia, her co-morbidities and clinical presentation with no features of bowel obstruction, it was decided to proceed directly to surgery under spinal anaesthesia without the need for further imaging.

The right groin was explored through an infrainguinal incision, identifying and dissecting the femoral hernia. Opening the sac revealed serosanguinous fluid, with a gangrenous appendix and a loop of ileum with what was identified as a gangrenous Meckel's diverticulum, in the narrow neck of the femoral canal.

The procedure was converted to a mini-laparotomy through a lower midline incision. The appendix was ligated and removed in the standard manner. A gangrenous Meckel's diverticulum was identified approximately 60cm from the ileocaecal junction and was resected with approximately 5cm of ileum. A primary anastomosis was performed. The patient was admitted to the high dependency unit overnight and was discharged home after three days of intravenous antibiotics.

Histology analysis showed an ischaemic appendix and a Meckel's diverticulum with ischaemic changes and surrounding ulceration extending into the resected ileum.

Discussion

The eponymously named de Garengeot hernia describes the presence of the vermiform appendix in a femoral hernia. First described in 1731, this condition is rare, with an overall estimated incidence ranging from 0.15% to 5% of femoral hernia repairs.[1]

It is suggested that the de Garengeot hernia arises secondary to abnormal position of the appendix in the pelvis, which places it at higher risk of entering the pelvic peritoneum and therefore the femoral hernia. Females tend to present more often than males and this is probably attributable to the increased incidence of femoral hernias in females. During a recent case series of 7 patients, the mean age of presentation was 55 years, the male-to-female ratio was 3:4 and patients most commonly presented with a tender groin swelling.[1]

Within the de Garengeot hernia, the appendix may be found to be normal, inflamed or indeed gangrenous and/or perforated. In the above mentioned case series, one appendix was perforated, two were inflamed and four were normal.[1] Operative management has been guided previously by intraoperative appearance of the appendix. Where inflammation, gangrene or perforation is present, an appendicectomy is undertaken. However, where a normal appendix is demonstrated, surgeons may elect not to perform an appendicectomy.

Another rare but well documented operative finding is the Littre's hernia. Initially described by the German surgeon Fabricius Hildanus in 1598, it was not until 1809 that Johann Friedrich Meckel discovered the embryological origin of the diverticulum that now bears his name. Despite being described over 100 years earlier by the French surgeon Alexis Littré as 'an appendix of the ileum' becoming incarcerated in a hernia, the term Littre's hernia was first used in 1841 as 'the presence of a Meckel's diverticulum in any hernia sac'.[2]

Unlike ordinary hernias, only part of the intestine is involved in the sac. It has a distinct termination and does not include omentum. For a true Littre's hernia to exist, the diverticulum must be the sole content of the hernia sac.[3] Indeed, the presence of other abdominal contents (such as in the case presented here) results in a mixed Littre's hernia. A Littre's hernia occurs in less than 1% of all Meckel's diverticula, which are themselves only present in up to 3% of the population. In a case series of strangulated hernias, it was noted that 1 out of 680 strangulated femoral hernias and 4 out of 654 strangulated inguinal hernias contained a Meckel's diverticulum.

Littre's hernia is known to be more common in inguinal hernias than any other, with up to 50% found in the inguinal canal,[4] usually on the right. Rates of strangulation, however, have been reported to be higher for femoral hernias.[3] Less commonly reported locations include umbilical, sciatic and lumbar hernias as well as, more recently, a laparoscopic port hernia.[6] Age of presentation has been reported to be as low as 12 days.[2]

Conclusions

Independently, de Garengeot and Littre's hernias are rare, and coexistence of the two extremely so. Indeed, to our knowledge, this is only the second such reported case in the literature (the other being published in 2012).[7] Given the rarity of these two conditions, compared with that of an inguinal or femoral hernia, these are often incidental findings at surgery and not investigated for prior to surgery.

In the case described, computed tomography would have been useful and would likely have resulted in a shorter operative time. However, early intervention is key and had the bowel been frankly ischaemic, the required surgery would have been more invasive and carried greater risks. The presence of the high dependency unit as a backup provided the support required to ensure a successful recovery for our patient. We recommend that surgeons bear the possibility of these conditions in mind when dealing with this type of patient and consider the potential for underlying bowel injury during any apparently routine hernia repair.

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